

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A reservoir for storing hydrogen, comprising:

a housing;

a molded body comprising a compressed hydrogen storage material powder accommodated in the housing, the molded body causes exothermic reaction when absorbing hydrogen and causes endothermic reaction when releasing hydrogen, and the molded body has a first side and a second side opposite to the first side, wherein the molded body has a plate-like shape, and the first and second sides of the molded body are flat, and the thickness of the molded body is equal to or smaller than ten millimeters;

a heat medium passage formed in the interior of the housing to face the first side of the molded body, wherein the heat medium passage is flat, wherein heat is transmitted from the molded body to a heat medium in the heat medium passage when the molded body absorbs hydrogen, and heat is transmitted from the heat medium in the heat medium passage to the molded body when the molded body releases hydrogen, and wherein the heat medium passage includes a duct that has a plurality of holes that extend parallel with each other in a longitudinal direction of the duct, wherein the duct is flat, and the duct contacts the first side of the molded body; and

a filter which forms a hydrogen passage, wherein the hydrogen passage is formed in the interior of the housing to face the second side of the molded body, wherein the hydrogen passage is flat.

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2-3. (Cancelled)

4. (Original) The reservoir as set forth in claim 1, wherein the molded body contains a highly heat conductive material.

5. (Original) The reservoir as set forth in claim 4, wherein the highly heat conductive material is copper.

6-8. (Cancelled)

9. (Original) The reservoir as set forth in claim 1, further comprising a main passage extending along the molded body and connected to the hydrogen passage, wherein the hydrogen is supplied from the exterior of the housing to the hydrogen passage through the main passage and is discharged from the hydrogen passage to the exterior of the housing through the main passage.

10. (Currently amended) A reservoir for storing hydrogen, comprising:
a housing;
a plurality of storage units stacked in the interior of the housing, wherein each storage unit includes:

a pair of plate-like molded bodies comprising a compressed hydrogen storage material powder, wherein each molded body causes exothermic reaction when absorbing hydrogen and causes endothermic reaction when releasing hydrogen, the molded body includes a first flat side and a second flat side opposite to the first side, and the molded bodies are located with respect to each other such that the first sides face each other, and the thickness of each molded body is equal to or smaller than ten millimeters; and

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a heat exchanger located between the molded bodies, wherein the heat exchanger includes a flat duct in which a heat medium flows, the duct contacts the first side of each molded body, heat is transmitted from the molded bodies to the heat medium in the duct when the molded bodies absorb hydrogen, and heat is transmitted from the heat medium in the duct to the molded bodies when the molded bodies release hydrogen, and wherein the duct has a plurality of holes that extend parallel with each other in a longitudinal direction of the duct; and

a plurality of filters which form flat hydrogen passages, wherein the hydrogen passages are formed in the interior of the housing to face the second sides of the molded bodies.

11. (Original) The reservoir as set forth in claim 10, wherein each molded body contains copper.

12. (Cancelled)

13. (Original) The reservoir as set forth in claim 10, wherein:
each molded body includes a chamfer;
a main passage is formed between each chamfer and a wall of the housing and is connected to the associated hydrogen passage; and

the hydrogen is supplied from the exterior of the housing to the hydrogen passages through the associated main passages and is discharged from the hydrogen passages to the exterior of the housing through the associated main passages.

14. (Original) The reservoir as set forth in claim 10, wherein the duct of each storage unit includes:

an upstream section and a downstream section, which extend parallel with each other; and

a connecting section, which connects the upstream section to the downstream section to form a substantially U-shaped heat medium passage in the duct.

15. (Original) The reservoir as set forth in claim 14, wherein:

the housing includes a main body for accommodating the storage units and a header attached to the main body;

the header defines an upstream chamber for receiving the heat medium from the exterior and a downstream chamber for discharging the heat medium to the exterior; and

the upstream section is connected to the upstream chamber while the downstream section is connected to the downstream chamber.

16. (Currently amended) A reservoir for storing hydrogen, comprising:

a housing;

a plurality of storage units stacked in the interior of the housing, wherein each storage unit includes:

a pair of plate-like molded bodies comprising a compressed hydrogen storage material powder, wherein each molded body causes exothermic reaction when absorbing hydrogen and causes endothermic reaction when releasing hydrogen, the molded body includes a first flat side and a second flat side opposite to the first side, and the molded bodies are located with respect to each other such that the first sides face each other, and the thickness of each molded body is equal to or smaller than ten millimeters; and

a heat exchanger located between the molded bodies, wherein the heat exchanger includes a flat duct in which a heat medium flows, the duct contacts the first side of each molded body, heat is transmitted from the molded bodies to the heat medium in the duct when the

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molded bodies absorb hydrogen, and heat is transmitted from the heat medium in the duct to the molded bodies when the molded bodies release hydrogen, and wherein the duct of each storage unit includes:

a plurality of holes that extend parallel with each other in a longitudinal direction of the duct;

an upstream section and a downstream section, which extend parallel with each other; and

a connecting section, which connects the upstream section to the downstream section to form a substantially U-shaped heat medium passage in the duct; and

a plurality of filters which form flat hydrogen passages, wherein the hydrogen passages are formed in the interior of the housing to face the second sides of the molded bodies.

17. (New) A reservoir for storing hydrogen, comprising:

a house;

a molded body comprising a compressed hydrogen storage material powder accommodated in the housing, the molded body causes exothermic reaction when absorbing hydrogen and causes endothermic reaction when releasing hydrogen, and the molded body has a first side and a second side opposite to the first side, wherein the molded body has a plate-like shape, and the first and second sides of the molded body are flat and parallel with each other;

a heat medium passage formed in the interior of the housing to face the first side of the molded body, wherein heat is transmitted from the molded body to a heat medium in the heat medium passage when the molded body absorbs hydrogen, and heat is

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transmitted from the heat medium in the heat medium passage to the molded body when the molded body releases hydrogen, and wherin the heat medium passage includes a duct that has a plurality of holes that extend parallel with each other in a longitudinal direction of the duct, wherein the duct is flat, and the duct contacts the first side of the molded body; and

a filter which forms a hydrogen passage so that hydrogen permeates through the filter, wherein the hydrogen passage is formed in the interior of the housing to face the second side of the molded body, wherein the hydrogen passage is flat.

18. (New) A reservoir for storing hydrogen, comprising:

a housing;

a plurality of storage units stacked in the interior of the housing, wherein each storage unit includes:

a pair of plate-like molded bodies comprising a compressed hydrogen storage material powder, wherein each molded body causes exothermic reaction when absorbing hydrogen and causes endothermic reaction when releasing hydrogen, the molded body includes a first flat side and a second flat side opposite to and parallel with the first side, and the molded bodies are located with respect to each other such that the first sides face each other; and

a heat exchanger located between the molded bodies, wherein the heat exchanger includes a flat duct in which a heat medium flows, the duct contacts the first side of each molded body, heat is transmitted from the molded bodies to the heat medium in the duct when the molded bodies absorb hydrogen, and heat is transmitted from the heat medium in the duct to the molded bodies when the molded bodies release hydrogen, and wherein the duct has a plurality of holes that extend parallel with each other in a longitudinal direction of the duct; and

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a plurality of filters which form flat hydrogen passages so that hydrogen permeates through the filters, wherein the hydrogen passages are formed in the interior of the housing to face the second sides of the molded bodies.